## WHAT IS CLAIMED IS:

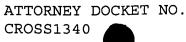
- 1. A method for encapsulating SCSI protocol for data transmission between two or more nodes across a packet-based network, comprising, at each node:
- (a) identifying all other available nodes, and remote devices attached to each of said nodes, on said network;
- (b) representing one or more of said remote devices such that they are made available to one or more local hosts;
- (c) encapsulating an input/output (I/O) phase between one or more of said local hosts and one or more of said remote devices; and
  - (d) repeating step (c) for subsequent I/O phases.
- 2. The method of Claim 1, wherein said input/output phase comprises a command phase, a data phase and a response phase.
- 3. The method of Claim 1, wherein encapsulating said I/O phase comprises encapsulating an individual command for a Fibre Channel or SCSI protocol.
- 4. The method of Claim 3, wherein said individual command is a task management function, an error recovery function or other I/O processing function.

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- The method of Claim 1, wherein each of said two or more nodes is communicatively connected to a Storage Area Network ("SAN").
- The method of Claim 5, wherein each of said 5 two or more nodes is an interface between its SAN and said packet-based network.
- 7. The method of Claim 5, wherein one of said 10 SANs is a back-up library.
  - The method of Claim 1, wherein each of said nodes is a Fibre-Channel-to-SCSI router.
  - The method of Claim 1, wherein said SCSI 9. protocol is a Fibre Channel SCSI protocol.
  - The method of Claim 1, wherein said packet-10. based network is an Asynchronous Transfer Mode ("ATM") network, an Ethernet network, an IP network or a SONET network.
  - 11. The method of Claim 1, wherein said packetbased network is a wide are network ("WAN").
  - The method of Claim 1, wherein said packet-12. based network is a dedicated link.
- The method of Claim 1, wherein said packet-13. 30 based network is a switched network.

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14. The method of Claim 1, wherein said representing step further comprises the steps of:

mapping a local address for each of one or more of said remote devices attached to a node to an intermediate address; and

mapping each of said intermediate addresses into a remote address at another node.

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15. The method of Claim 1, wherein said encapsulating step further comprises the steps of:

converting said I/O phase from said SCSI protocol to a protocol associated with said packet-based network; and

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converting back said I/O phase to said SCSI protocol at a remote node.

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- 16. The method of Claim 15, wherein said protocol associated with said packet-based network is an Asynchronous Transfer Mode ("ATM") protocol, an Ethernet protocol, an IP protocol or a SONET protocol.
- 17. The method of Claim 1, wherein said identifying step further comprises dynamically discovering all other available nodes, and the devices attached to said nodes, through a common server.
- 18. The method of Claim 17, wherein at least one of said two or more nodes is designated as said common server.

- The method of Claim 17, wherein said common 19. server is a separate device from said nodes.
- The method of Claim 17, further comprising a 5 20. heartbeat message for determining, at said common server, if a node drops from said network.
  - The method of Claim 1, wherein said packet-21. based network is any network that allows data packets to flow between nodes.
  - The method of Claim 1, wherein different ones 22. of said two or more nodes can be communicatively connected to a SAN using different network protocols.

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- 23. A system for encapsulating SCSI protocol for data transmission between two or more nodes across a packet-based network, comprising, at each node:
- (a) instructions for identifying all other available nodes, and remote devices attached to each of said nodes, on said network;
- (b) instructions for representing one or more of said remote devices such that they are made available to one or more local hosts;
- (c) instructions for encapsulating an input/output (I/O) phase between one or more of said local hosts and one or more of said remote devices; and
- (d) instructions for repeating step (c) for subsequent I/O phases.
- 24. The system of Claim 23, wherein said input/output phase comprises a command phase, a data phase and a response phase.
- 25. The system of Claim 23, wherein all instructions are stored in memory within each of said nodes.
- 26. The system of Claim 23, wherein said instructions for encapsulating said I/O phase comprise instructions for encapsulating an individual command for a Fibre Channel or SCSI protocol.
- 27. The system of Claim 26, wherein said individual command is a task management function, an

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error recovery function or other I/O processing function.

- 28. The system of Claim 23, further comprising a Storage Area Network ("SAN") communicatively connected to each of said two or more nodes.
  - 29. The system of Claim 28, wherein each of said two or more nodes is an interface between its SAN and said packet-based network.
  - 29. The system of Claim 28, wherein at least one of said SANs is a back-up library.
  - 30. The system of Claim 23, wherein each of said nodes is a Fibre-Channel-to-SCSI router.
  - 31. The system of Claim 23, wherein said SCSI protocol is a Fibre Channel SCSI protocol.
  - 32. The system of Claim 23, wherein said packet-based network is an Asynchronous Transfer Mode ("ATM") network, an Ethernet network, an IP network or a SONET network.
  - 33. The system of Claim 23, wherein said packetbased network is a wide are network ("WAN").
- 34. The system of Claim 23, wherein said packetbased network is a dedicated link.

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- 35. The system of Claim 23, wherein said packetbased network is a switched network.
- 36. The system of Claim 23, wherein said instructions for representing further comprise:

instructions for mapping a local address, for each of one or more of said remote devices attached to a node, to an intermediate address; and

instructions for mapping each of said intermediate addresses into a remote address at another node.

95.36. The system of Claim 23, wherein said instructions for encapsulating further comprise:

instructions for converting said I/O phase from said SCSI protocol to a protocol associated with said packet-based network; and

instructions for converting back said I/O phase to said SCSI protocol at a remote node.

- 37. The system of Claim 36, wherein said protocol associated with said packet-based network is an Asynchronous Transfer Mode ("ATM") protocol, an Ethernet protocol, an IP protocol or a SONET protocol.
- 38. The system of Claim 23, further comprising a common server, and wherein said instructions for identifying further comprise instructions for dynamically discovering all other available nodes, and

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the devices attached to said nodes, through said common server.

- 39. The system of Claim 38, wherein at least one of said two or more nodes is designated as said common server.
  - 40. The system of Claim 38, wherein said common server is a separate device from said nodes.
  - 41. The system of Claim 38, further comprising instructions for a heartbeat message to determine, at said common server, if a node drops from said network.
  - 42. The system of Claim 23, wherein said packetbased network is any network that allows data packets to flow between nodes.
  - 43. The system of Claim 23, wherein different ones of said two or more nodes can be communicatively connected to a SAN using different network protocols.

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